

**APPLICATION PACKET**

**for**

**AIR QUALITY CONTROL  
GENERAL PERMIT**

**for**

**SOIL VAPOR EXTRACTION  
UNITS**



**Arizona Department Of Environmental Quality**

**Air Quality Division**

## TABLE OF CONTENTS

<b>I.</b>	<b>INTRODUCTION</b>	<b>3</b>
<b>A.</b>	<b>APPLICABILITY</b>	<b>3</b>
<b>B.</b>	<b>AUTHORIZATION TO OPERATE</b>	<b>3</b>
<b>C.</b>	<b>JURISDICTION</b>	<b>4</b>
<b>D.</b>	<b>PERMIT ISSUANCE TIME FRAME</b>	<b>4</b>
<b>E.</b>	<b>FORMS</b>	<b>4</b>
<b>II.</b>	<b>APPLICATION INSTRUCTIONS</b>	<b>4</b>
	<b>Appendix:</b>	
	<b>Standard Application Form</b>	<b>7</b>
	<b>Emission Sources</b>	<b>8</b>
	<b>Exhaust Gas Exit Velocity Calculations</b>	<b>9</b>
	<b>Equipment List</b>	<b>10</b>
	<b>Air Pollution Controls</b>	<b>11</b>
	<b>Compliance Plan</b>	<b>12</b>
	<b>Compliance Certification / Certification of Truth, Accuracy, and Completeness</b>	<b>13</b>
	<b>Fee Summary</b>	<b>14</b>

## **I. INTRODUCTION**

This packet has been developed specifically for applicants applying for coverage under the Soil Vapor Extraction Unit (SVEU) General Permit in lieu of an individual permit. However, this packet is not intended as a substitute for Arizona Air Quality Regulations.

The applicant shall read all sections of this manual very carefully and provide all necessary information requested. The final application submitted should include the forms in Appendix of this packet and necessary attachments (i.e., site diagram showing the following: equipment building layout, building heights, location of emission points, property boundaries, adjacent streets, directional arrow, elevation, and scale). Additional copies of the forms may be made as necessary.

### **A. APPLICABILITY**

1. The SVEU General Permit, hereafter referred to as General Permit covers SVEUs which are subject to Federal, State and/or County regulations. The General Permit covers only those SVEUs which have a manufacturer listed Volatile Organic Compounds (VOCs) destruction efficiency of 90%. When the inlet concentration is less than 500 parts per million by volume (ppmv), this 90% destruction efficiency requirement is exempt.
2. This General Permit covers SVEUs complying with the following limitations:
  - a. Gases exiting the SVEU shall have an outlet Benzene concentration equal to or less than 200 ppm<sub>v</sub>.
  - b. Gases exiting the SVEU shall have an exit velocity equal to or greater than 2.30 meters per second (m/s).
  - c. If there is any structure within the 5L distance of the SVEU, where L represents the longest dimension (length, width or height) of the structure then the Permittee shall maintain a minimum stack height of 1' above the tallest structure. Otherwise, the stack height for this SVEU shall not be less than 15 feet from ground level.
  - d. The SVEU must be either electrically powered or fueled with natural gas or propane.
  - e. When the SVEU is operating in thermal oxidation mode, the process temperature shall be equal to or greater than 1400 degrees Fahrenheit (°F).
  - f. When the SVEU is operating in catalytic oxidation mode, the process temperature shall be equal to or greater than 600 °F.
3. SVEUs which are not able to comply with the limitations specified in paragraph 2 of this Section shall obtain an individual permit from the Arizona Department of Environmental Quality (ADEQ).

### **B. AUTHORIZATION TO OPERATE**

If the applicant meets the criteria for coverage under this General Permit as specified in Section A above, an Authorization-To-Operate (ATO) will be issued for the SVEU.

## **C. JURISDICTION**

1. Pursuant to Arizona Revised Statute (A.R.S.) §49-480, the Air Quality Control Districts (AQCD) of Maricopa, Pima, and Pinal County may administer, inspect, and enforce the General Permit and issue ATOs for sources under their jurisdiction.
2. If the applicant has any questions regarding jurisdictional issues, please contact the Air Quality Division of ADEQ at (602) 771-2316.

## **D. PERMIT ISSUANCE TIME FRAME**

According to A.A.C. R18-1-525, ADEQ has 21 business days to determine if the submitted general permit application is complete. Once the application is determined to be complete, the department has 103 business days to make a licensing decision on the application. The counting of the days can be suspended by the Department upon the determination that additional information is needed. In such a case, a letter will be sent to the applicant informing them that the counting of days has been suspended, and will also specify what additional information is necessary to continue processing the application.

## **E. FORMS**

The Appendix includes the standard application form and all other necessary forms required to be submitted to the Department by the owner or operator of a SVEU.

# **II. APPLICATION INSTRUCTIONS**

### **STEP 1: Standard Application Form**

Arizona Administrative Code, Title 18, Chapter 2, Section 304, (A.A.C. R18-2-304), requires applicants to submit the STANDARD APPLICATION FORM (FORM #1) and all information required by the FILING INSTRUCTIONS as shown in the Appendix. Instructions for completing FORM #1 are as follows:

- A. Items #1 through #5 of the application form are self-explanatory.
- B. Item #6: The Plant/Site Manager or Contact Person shall be the person that ADEQ may contact for any additional information.
- C. Item #7: Specify the location of the plant. The township/range/section may be substituted for latitude/longitude coordinates which are specified in degrees, minutes and seconds.
- D. Item #8: The "Equipment Purpose" shall be SVEU. List all equipment to be located at the plant.
- E. Item #9: If the "other" box is checked, please be specific as to what the organization is.
- F. Item #10: Asks for the Permit Application Basis which indicates what type of permit is necessary.
  1. If the equipment has never been permitted in Arizona, then the box marked New Source and General Permit should be checked.
  2. If the equipment is already permitted under an individual permit and the applicant is applying for coverage under the General Permit, then the box marked General Permit should be checked and the current permit number must be included.

3. If the facility is already permitted under the General Permit and the applicant wants to add additional equipment, then the boxes marked General Permit and Revision should be checked.
4. For new sources the Date of Commencement of Construction or Modification is the expected date that construction will begin.
5. If there is any chance that the equipment will be leased out, answer “yes”.
6. The Standard Industrial Classification Code for SVEU is **4953**. State Permit Class shall be **Class II**.

G. Item #11 and #12: The “Responsible Official” is the owner or partner of the company in most cases. It may also be the president or vice-president of larger companies. If there is a question as to who the responsible official is, contact Compliance Assistance at ADEQ for more information.

**STEP 2: Emission Sources Table**

A.A.C. R18-2-304, requires applicants to submit the “Emission Sources” Table (Form #2) and all information required by the FILING INSTRUCTIONS as shown in the Appendix. Instructions for completing Form #2 can be found at the bottom of the form.

**STEP 3: Exhaust Velocity Calculations**

Stack exhaust velocity calculations are based on the dimensions of the exhaust stack and the flow rate of the SVEU. FORM #3 can be used to record the stack dimensions and SVEU flowrate in order to calculate the exhaust exit velocity.

**STEP 4: Equipment List**

ADEQ needs to be able to identify all pieces of equipment covered under the General Permit. Use Form #4 of the Appendix to provide a list of all pieces of equipment to be permitted including control equipment. **The list should include the type of equipment, the make, model, maximum rated capacity, serial number, manufacture date, and equipment identification number (if available) of each piece of equipment.**

**STEP 5: Air Pollution Controls**

All pollution control equipment and pollution control procedures must be described in order to satisfy this submittal requirement. FORM #5 can be used to submit the necessary pollution control information.

**STEP 6: Compliance Plan**

A compliance plan must be submitted by all applicants. FORM #6 can be used to satisfy this requirement.

**STEP 7: Compliance Certification / Certification of Truth, Accuracy, and Completeness**

A “Certification of Compliance with all Applicable Requirements”, and “Certification of Truth, Accuracy, and Completeness” must be signed by a Responsible Official. FORM #7 can be used to satisfy this requirement.

**STEP 8:**      **Filing Instructions**

1.      An application fee of \$500.00 must be submitted by all applicants. Please make your check or money order payable to ADEQ. The application fee must accompany each application submittal.
2.      Please mail FORMS #1 through #8 of the application packet, all necessary maps and diagrams, and the \$500.00 application fee to the following address:

Air Quality Permits Section  
Arizona Department Of Environmental Quality  
Air Quality Division  
1110 West Washington  
Phoenix, Arizona 85007

3.      Please remember to make photo copies of Forms 1 through 8 of the application packet before mailing.
4.      Pages 1 through 6 of the application packet should be kept by the applicant for reference purposes.

# FORM #1

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY  
Air Quality Division  
1110 West Washington g Phoenix, Arizona 85007 g Phone: (602) 771-2338

## STANDARD PERMIT APPLICATION

( As required by A.R.S. § 49-426, and Chapter 2, Article 3, Arizona Administrative Code)

1. Permit to be issued to: (Business license name of organization that is to receive permit) \_\_\_\_\_
2. Mailing Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ ZIP: \_\_\_\_\_
3. Previous Company Name: (if applicable) \_\_\_\_\_
4. Name (or names) of Owners/Principals: \_\_\_\_\_  
Fax #: \_\_\_\_\_ Phone: \_\_\_\_\_
5. Name of Owner's Agent: \_\_\_\_\_  
Fax #: \_\_\_\_\_ Phone: \_\_\_\_\_
6. Plant/Site Manager/Contact Person and Title: \_\_\_\_\_  
Fax #: \_\_\_\_\_ Phone: \_\_\_\_\_
7. Plant Site Name: \_\_\_\_\_  
Plant Site Location/Address: \_\_\_\_\_  
City: \_\_\_\_\_ County: \_\_\_\_\_ ZIP: \_\_\_\_\_  
Indian Reservation (if applicable, which one): \_\_\_\_\_  
Latitude/Longitude, Elevation: \_\_\_\_\_
8. Equipment Purpose: \_\_\_\_\_  
Equipment List/Description: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
9. Type of Organization:  
~ Corporation ~ Individual Owner  
~ Partnership ~ Government Entity (Government Facility Code): \_\_\_\_\_  
~ Other \_\_\_\_\_
10. Permit Application Basis: ~ New Source ~ Revision  
(Check all that apply) ~ Portable Source : General Permit  
~ Renewal of existing Permit  
For renewal or modification, include existing permit number (and expiration date): \_\_\_\_\_  
Date of Commencement of Construction or Modification: \_\_\_\_\_  
Is any of the equipment to be leased to another individual or entity? ~ Yes ~ No  
Standard Industrial Classification Code: 4953 State Permit Class: II
11. Signature of Responsible Official of Organization: \_\_\_\_\_  
Official Title of Signer: \_\_\_\_\_
12. Typed or Printed Name of Signer: \_\_\_\_\_  
Date: \_\_\_\_\_ Telephone Number: \_\_\_\_\_

# FORM #2

COMPANY NAME: \_\_\_\_\_

## EMISSION SOURCE

Estimated "Potential to Emit" per R18-2-101.

Review of applications and issuance of permits will be expedited by supplying all necessary information on this Table.

PAGE \_\_\_\_ OF \_\_\_\_

DATE \_\_\_\_\_

REGULATED AIR POLLUTANT DATA					EMISSION POINT DISCHARGE PARAMETERS									
EMISSION POINT [1]		CHEMICAL COMPOSITION OF TOTAL STREAM	REGULATED AIR POLLUTANT EMISSION RATE		UTM COORDINATES OF EMISSION POINT [5]			STACK SOURCES [6]					NONPOINT	
NUM BER	NAME	REGULATED AIR POLLUTANT NAME [2]	#/HR. [3]	TONS/ YEAR [4]	ZONE	EAST (Mtrs)	NORTH (Mtrs)	HEIGHT ABOVE GROUND (ft)	HEIGHT ABOVE STRUC. (ft)	EXIT DATA			SOURCES [7]	
										DIA. (m)	VEL. (mps)	TEMP. (°F)	LENGTH (ft.)	WIDT H (ft.)

GROUND ELEVATION OF FACILITY ABOVE MEAN SEA LEVEL \_\_\_\_\_ feet

ADEQ STANDARD CONDITIONS ARE 293K AND 101.3 KILOPASCALS (A.A.C. R18-2-101)

### General Instructions:

- Identify each emission point with a unique number for this plant site, consistent with emission point identification used on plot plan, previous permits, and Emissions Inventory Questionnaire. Include fugitive emissions. Limit emission point number to eight (8) character spaces. For each emission point use as many lines as necessary to list regulated air pollutant data. Typical emission point names are: heater, vent, boiler, tank, reactor, separator, baghouse, fugitive, etc. Abbreviations are O.K.
- Components to be listed include regulated air pollutants as defined in R18-2-101. Examples of typical component names are: Carbon Monoxide (CO), Nitrogen Oxides (NO<sub>x</sub>), Sulfur Dioxide (SO<sub>2</sub>), Volatile Organic Compounds (VOC), particulate matter (PM), particulate less than 10 microns (PM<sub>10</sub>), etc. Abbreviations are O.K.
- Pounds per hour (#/HR) is maximum potential emission rate expected by applicant.
- Tons per year is annual maximum potential emission expected by applicant, which takes into account process operating schedule.
- As a minimum applicant shall furnish a facility plot plan as described in the filing instructions. UTM coordinates are required only if the source is a major source or is required to perform refined modeling for the purposes of demonstrating compliance with ambient air quality guidelines.
- Supply additional information as follows if appropriate:
  - Stack exit configuration other than a round vertical stack. Show length and width for a rectangular stack. Indicate if horizontal discharge with a note.
  - Stack's height above supporting or adjacent structures if structure is within 3 "stack height above the ground" of stack.
- Dimensions of nonpoint sources as defined in R18-2-101.

# FORM #3

## Exhaust Gas Exit Velocity Calculations

### Exhaust Velocity Calculating Steps

#### Stage 1. Exhaust Stack Diameter (multiplication)

Inches to Meters		Feet to Meters		Meters (m)
Inches (in)	Conversion Factor	Feet (ft)	Conversion Factor	
	0.0254		0.3048	

- Insert manufacturer's listed exit stack diameter in the proper units slot.
- If listed stack diameter is given in meters proceed to stage 2 of conversions.
- If listed stack diameter is given in either inches or feet multiply by associated conversion factor from table to achieve diameter in meters.

#### Stage 2. Exhaust Stack Area (multiplication)

Stack Diameter (m)	Diameter Squared (m <sup>2</sup> )	Conversion Factor For Area	Exhaust Stack Area (m <sup>2</sup> )
		0.7854	

- Insert final meter calculation from Stage 1 above, into "Stack Diameter" slot.
- Square diameter and enter resulting number into "Diameter Squared" slot.
- Multiply number in "Diameter Squared" slot by the number found in the "Conversion Factor for Area" slot, and record in the "Exhaust Stack Area" slot.

#### Stage 3. Exhaust Flow Rate (multiplication)

Standard Cubic Feet per Minute (SCFM) to Standard Cubic Meters per Second (SCMS)		
SCFM	Conversion Factor	SCMS
	0.0004719	

- If manufacturer's listed exhaust flowrate is given in SCFM rather than in SCMS, insert SCFM number into "SCFM" slot and multiply by the associated conversion factor and record in the "SCMS" slot and proceed to Stage 4.
- If manufacturer's listed exhaust flowrate is given in SCMS then record in proper slot in table and proceed to Stage 4.

#### Stage 4. Exhaust Gas Exit Velocity (division)

Exhaust Flow Rate (SCMS)	Exhaust Stack Area (m <sup>2</sup> )	Exhaust Gas Exit Velocity ( meters/second )

- Insert number from Stage 3 "SCMS" slot into "Exhaust Flow Rate" slot.
- Insert calculated value from "Exhaust Stack Area" of Stage 2 into "Exhaust Stack Area" slot above.
- Divide "Exhaust Flow Rate" value by the "Exhaust Stack Area" value, and record result in "Exhaust Gas Exit Velocity" slot.

**FORM #4**  
**Equipment List**

Type of Equipment	Size	Manufacturer	Manufacture Date	Model	Serial #	Equipment ID

## FORM #5

### Air Pollution Controls

Please complete this summary table for each proposed pollution control device (be sure to include site diagrams and topo maps with this packet)

Air Pollution Control Devices (APCD)	
Annual Operating Hours	
Fuel Type(s) for APCD (i.e. natural gas, propane, or electrical energy)	
Maximum Fuel Usage for APCD (cfm)	
Maximum VOCs concentration	
Stack Height (ft)	
Rated Maximum Exit Flowrate, specify actual (acfm) or standard conditions (scfm)	
Stack Gas Exit Temperature (°F)	

# FORM #6

## COMPLIANCE PLAN FOR SVEU OPERATIONS

The Responsible Official shall submit a Compliance Plan with the following permit applications, and at such other times as requested by the Director.

- |                          |  |                          |  |
|--------------------------|--|--------------------------|--|
| <input type="checkbox"/> | Initial Class I or Class II Permit Application       | <input type="checkbox"/> | Application for a Significant Revision to a Class I or Class II Permit |
| <input type="checkbox"/> | Application for a Class I or Class II Permit Renewal |                          |  |

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1. Compliance status with respect to all Applicable Requirements:

Will your facility be in compliance at the time of permit issuance, or is your facility currently in compliance with the following applicable requirements?

- |    |   |   |  |  |
|----|---|---|--|--|
| a. | A.A.C. R18-2-719<br>(Fuel Burning Equipment: this rule is applicable to any type of stationary rotating machinery aggregate greater than 325 brake horsepower; for example generators or internal combustion engines) | <input checked="" type="checkbox"/> YES | <input checked="" type="checkbox"/> NO | <input checked="" type="checkbox"/> NA |
| b. | A.A.C. R18-2-309<br>(Compliance Plan; Certification)  | <input checked="" type="checkbox"/> YES | <input checked="" type="checkbox"/> NO | <input checked="" type="checkbox"/> NA |
| c. | A.A.C. R18-2-324<br>(Portable Sources)  | <input checked="" type="checkbox"/> YES | <input checked="" type="checkbox"/> NO | <input checked="" type="checkbox"/> NA |
| d. | A.A.C. R18-2-702<br>(General Provisions: this rule states that the opacity of any effluent shall not be greater than 40%)   | <input checked="" type="checkbox"/> YES | <input checked="" type="checkbox"/> NO | <input checked="" type="checkbox"/> NA |
| e. | A.A.C. R18-2-730<br>(Standards of Performance for Unclassified Sources: this rule is applicable to all soil remediation facilities)   | <input checked="" type="checkbox"/> YES | <input checked="" type="checkbox"/> NO | <input checked="" type="checkbox"/> NA |
| f. | A.A.C. R18-2-313<br>(Transition from Installation and Operating Permit Program to Unitary Permit Program: Applicable for Existing Sources)  | <input checked="" type="checkbox"/> YES | <input checked="" type="checkbox"/> NO | <input checked="" type="checkbox"/> NA |

2. If any applicable requirement under Section 1 has a box marked "NO", you must submit a "COMPLIANCE SCHEDULE." Call ADEQ-Air Quality for a copy.

3. Any Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

FORM #7

*Certification of Compliance with all Applicable Requirements:*

This certification must be signed by a Responsible Official. Applications without a signed certification will be deemed incomplete.

*The responsible official is defined as a person who is in charge of principal business functions or who performs policy or decision making functions for the business. This may also include an authorized representative for such persons. For a complete definition see the Arizona Administrative Code, Title 18, Chapter 2, Section R18-2-301.*

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Arizona Department of Environmental Quality as public record. I also attest that I am in compliance with the applicable requirements listed in Section 1 of the Compliance Plan and will continue to comply with such requirements and any future requirements that become effective during the life of my permit. I will present a certification of compliance to ADEQ no less than annually and more frequently if specified by ADEQ. I further state that I will assume responsibility for the construction, modification, or operation of the source in accordance with Arizona Administrative Code, Title 18, Chapter 2 and any permit issued thereof.

Name (Print/Type): \_\_\_\_\_

(Signature): \_\_\_\_\_ Date: \_\_\_\_\_

***Certification of Truth, Accuracy, and Completeness  
Arizona Administrative Code R18-2-304.H.***

*R18-2-304.H. Certification of Truth, Accuracy, and Completeness. Any application form, report, or compliance certification submitted pursuant to this Chapter shall contain certification by a responsible official of truth, accuracy, and completeness. This certification and any other certification required under this Article shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.*

By my signature I, \_\_\_\_\_, hereby certify that based on information and belief formed after reasonable inquiry, the statements and information in this document are true, accurate, and complete.

Name (Print/Type): \_\_\_\_\_

(Signature): \_\_\_\_\_ Date: \_\_\_\_\_

# FORM #8 Fee Summary

Fee Rule Summary for Class II Sources									
SOURCE									
CLASS II									
TITLE V					NON TITLE V				
INDIVIDUAL			GENERAL PERMIT		INDIVIDUAL			GENERAL PERMIT	
PROCESSING FEE \$66/hr No maximum Fee			APPLICATION FEE \$500		PROCESSING FEE \$66/HOUR \$25,000 MAXIMUM FEE			APPLICATION FEE \$500	
<u>ANNUAL FEE</u> <u>Administrative</u> <b>Synthetic Minor Sources - Except Portables</b>					<u>ANNUAL INSPECTION FEE</u> Stationary Sources: \$3,250 Portable Sources: \$3,250 Gasoline Service Station: \$500				
ACCELERATED PERMIT APPLICATION FEE \$15,000			ANNUAL ADMINISTRATIVE FEE Small Source: \$500 Others: \$3,000		ACCELERATED PERMIT APPLICATION FEE \$15,000 \$25,000 MAXIMUM FEE			ANNUAL INSPECTION FEE Gasoline Service Station: \$500 Crematorium: \$1,000 Others: \$2,000	
Aerospace: \$12,900 Cement plants: \$39,500 Combustion/Boilers: \$9,600 Compressor stations: \$7,900 Electronics: \$12,700 Expandable Foam: \$9,100 Foundries: \$12,100 Landfills: \$9,900 Lime Plants: \$37,300 Copper & Nickel Plants: \$9,300 Gold Mines: \$9,300 Mobile Home manufacturing: \$9,200 Paper Mills: \$12,700 Paper Coaters: \$9,600 Petroleum Products Terminal facilities: \$14,100 Polymeric Fabric Coaters: \$12,700 Reinforced Plastics: \$9,600 Semiconductors Fabrication: \$16,700 Copper Smelters: \$39,500 Utilities-Natural Gas: \$10,200 Utilities-Fossil Fuel except Natural Gas: \$20,200 Vitamin/Pharmaceutical Manufacturing: \$9,800 Wood Furniture: \$9,600 Others: \$9,900 Others with Continuous Emission Monitoring: \$12,700 Stationary Source: \$5,000 Portable Source: \$5,000 Small Source: \$500									
<b>Notes:</b> There is no fee for transfers, administrative amendments, or 317 changes of permits. The fee rate will be adjusted in the beginning of each year based on the CPI index. Administrative and Inspection fees are due each year no later than March 31st or 60 days after the Director mails the invoice, whichever is later. Information for this table was taken from the A.A.C. R18-2-326 and R18-2-511									